

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006714**Date Inspected:** 14-May-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Mike Gregson, Rob Walters**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge K Pipe Beams**Summary of Items Observed:**

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

**OIW Fabrication Shop-Bay 3****Hinge-K Pipe Beam Assembly 102A-1: 5/14/09**

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed this assembly 102A-1 was currently sitting idle, with a pending critical weld repair on weld joint #W2-12/W2-13. QA Inspector noticed this weld repair had been excavated by welder #T6, Mr. Craig Jacobsen and 100% visual and magnetic particle testing had been performed by QC Inspector Rob Walters on 5/13/09 in accordance with the applicable welding procedure specification (WPS3046) and AWS D1.5. QA Inspector noticed that no rejectable indications were found, as noted next to the weld excavation by Mr. Rob Walters.

**Hinge-K Pipe Beam Assembly 102A-2: 5/14/09**

a111-2 Forging to a110-2 Base Plate

QA Inspector noticed this assembly 102A-2 was sitting idle, with a pending non-critical weld repair.

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Hinge-K Pipe Beam Assembly 102A-3: 5/14/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed this assembly 102A-3 was sitting idle, with a pending non-critical weld repair.

Hinge-K Pipe Beam Assembly 102A-4: 5/14/09

a111-4 Forging to a110-4 Base Plate

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that 100% final ultrasonic weld inspection on the CJP (AWS D1.5 TC-U9a-S) a111-4 forging to a110-4 base plate, weld joint designated as #W2-12 & W2-1. QA Inspector reviewed the applicable ultrasonic testing report and noticed QC Inspector Steve Barnett had performed the ultrasonic weld inspection and had found a total of 1 recordable indication. QA Inspector noted the recordable indication had a decibel rating of +8, a depth/length of 36mm/10mm and Mr. Barnett had used a 60 transducer angle. QA Inspector noted Mr. Barnett had performed the ultrasonic weld inspection with a 60 transducer angle from face A&B and a 70 degree transducer angle from face A, which is in compliance with AWS D1.5 and OIW approved procedure. QA Inspector performed approximately 10% ultrasonic weld inspection on the CJP (AWS D1.5 TC-U9a-S) a111-4 forging to a110-4 base plate, weld joint designated as #W2-12 & W2-1 and found 1 recordable indication. QA Inspector noted this recordable indication was previously found by Mr. Barnett and QA Inspector also recorded a decibel rating of +8, depth/length of 36mm/10mm, with a 60 transducer angle. See applicable ultrasonic testing report (TL6027), for additional details.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 5/14/09

a124-6 Half Fuse to a124-7 Half Fuse

QA Inspector noticed this fuse assembly 120A-1 was sitting idle in OIW Bay 3, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 5/14/09

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed this assembly 120A-2 was sitting idle, with a pending critical weld repair.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/14/09

a124-12 Half Fuse to a124-10 Half Fuse

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that 100% final ultrasonic weld inspection on the CJP (AWS D1.5 B-U3c-S), a124-12 half fuse to a124-10 half fuse, weld joint designated as #WM3-18. QA Inspector reviewed the applicable ultrasonic testing report (UT-2244-34) and noticed QC Inspector Steve Barnett had performed the final ultrasonic weld inspection, after rough machining and had found no rejectable indications. QA Inspector noted that Mr. Barnett had performed the ultrasonic weld inspection with a 60 transducer from face A&B and a 70 transducer from face A, which is in compliance with AWS D1.5 and approved OIW procedure. QA Inspector performed approximately 10% ultrasonic weld inspection on this a124-12 half fuse to a124-10 half fuse, weld joint designated as #WM3-18 and found no rejectable indications. QA Inspector performed the ultrasonic weld inspection with a 60 transducer from face A&B and a 70 transducer from face A. See completed ultrasonic testing report (TL6027), for additional details.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/14/09

a124-13 Half Fuse to a124-4 Half Fuse

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QA Inspector noticed this fuse assembly 120A-4 was sitting idle, pending transfer to A&G Machining, for rough machining.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 5/14/09

a124-14 Half Fuse to a124-2 Half Fuse

QA Inspector witnessed welder # T6, Mr. Craig Jacobsen pre-heating and performing submerged arc welding on the a124-14 half fuse to a124-2 half fuse CJP weld splice, designated as weld joint #WM3-18. QA Inspector noticed that the welding root was complete and Mr. Craig Jacobson was welding the remaining cover passes on the interior of assembly 120A-5, splice QA Inspector noticed that QC Inspector Rob Walters was present to verify in process welding parameters(amps/volts) and constant pre-heat temperatures (minimum 350 F). QA Inspector noted that Mr. Craig Jacobson appeared to be compliance with the applicable welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-9: 5/14/09

a125 & b125 Ring Stiffeners to a124-9 Half Fuse

QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian, performing submerged arc welding on the internal ring stiffener, designated as weld joint #WM3-11, in the flat position (1G). QA Inspector noticed that QC Inspector Rob Walters was present to verify in-process welding parameters (amps/volts) and pre-heat temperatures. QA Inspector verified Mr. Tim O'Brian was currently qualified for this welding process/position and randomly recorded welding parameters of 590 amps and 29 volts. QA Inspector noted that Mr. Tim O'Brian appeared to be in compliance with the applicable welding procedure specification (WPS 4020).

Material, Equipment, and Labor Tracking

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 5 OIW production personnel and 2 QC Inspectors.

### Summary of Conversations:

As noted above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Vance,Sean	Quality Assurance Inspector
<b>Reviewed By:</b>	Adame,Joe	QA Reviewer

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